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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,862	04/17/2001	Shai Dekel	18104.0011U1	7510
23859	7590	01/12/2005	EXAMINER \	
NEEDLE & ROSENBERG, P.C. SUITE 1000 999 PEACHTREE STREET ATLANTA, GA 30309-3915			LU, TOM Y	
			ART UNIT	PAPER NUMBER
			2621	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/837,862

Applicant(s)

DEKEL ET AL.

Examiner

Tom Y Lu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 52-62 is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☒ Claim(s) 63 and 64 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment and written response filed on October 14, 2004 has been entered.
2. Claims 1, 6, 7 13, 19, 24-36 have been amended.
3. Claims 37-64 have been newly added.
4. Claims 1-64 are pending.

### ***Response to Arguments***

5. Applicant's arguments filed on 10/14/2004 have been fully considered but they are not persuasive.

The Chang Reference:

With regard to independent claims 1, 7, 13 and 25, applicant argues the Chang reference does not teach at least a lossless progressive image streaming system wherein the client computer generates and transmits to the server a request list containing the coordinates of data blocks required for rendering a region of interest within the digital image, wherein the request list is ordered in accordance with a selected progressive mode. With regard to independent claims 19, 31 and 41, applicant concludes the Chang reference does not disclose the amended limitation of “wherein the request list is ordered in accordance with the absolute value of requested subband coefficients whereby subband coefficients with larger absolute values are requested before subband coefficients with smaller absolute values”. Upon further review of specification, and in light of applicant’s arguments, the examiner respectfully disagrees for the following reasons. First of all, with regard to claims 1, 7, 13, and 25, the Chang reference does anticipate the amended limitation of “wherein said request list is ordered in accordance with a selected

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progressive mode” as evidenced at column 9, lines 52-55. Chang explains the request includes physical coefficient coordinates, which is the claimed “request list”, and such request list is in accordance with “the pyramidal data structure”, which is the claimed “a selected progressive mode”. The pyramidal data structure is a coarse-to-fine mode as shown in figure 2a-2f, as well as explanation at column 12, lines 2-6. Additionally, regarding to claims 19, 31 and 41, the Chang reference’s coarse-to-fine mode inherently includes the characteristic of “subband coefficients with larger absolute values are requested before subband coefficients with smaller absolute values” because the coarse level coefficients are low frequency coefficients, which have the larger absolute value, and the fine coefficients are high frequency coefficients, which have small absolute value, see column 8, lines 6-22. For example, the coefficients in the subband LL are always transmitted before the coefficients in subband HH, and the absolute value of the coefficients in the subband LL are larger than HH.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-39, 41-43, 45-46 and 48-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al (U.S. Patent No. 6,711,297 B1).

- a. Referring to Claim 1, Chang discloses an image storage device for storing a digital image (an image archive 112, column 5, line 7); a client computer (client

computer 150, column 5, line 17) coupled to the communication network (network 160, column 5, line 18), wherein said client computer generates and transmits across said communication network a request list (a request of physical coefficients coordinates corresponding to pyramidal data structure, column 9, lines 52-54, is the claimed "request list") containing the coordinates of data blocks required for rendering a region of interest (the image area is the claimed "region of interest", column 9, lines 44-45) within said digital image wherein said request list is ordered in accordance with a selected progressive mode (the request list is ordered in accordance with a selected progressive mode of "pyramidal data structure", which is a coarse-to-fine structure/mode); a server computer (server 140, column 5, line 16) coupled to said communication network and said image storage device, said server computer adapted to perform the steps (a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The following steps are performed as intended use of the server in claimed system. For the sake of brevity, the examiner provides explanation as follows) of: preprocessing said digital image through a lossless wavelet transformation (column 6, line 18 and 47); receiving said request

list from said client computer (the request list mentioned above, column 9, lines 58-60); and progressively transmitting to said client computer data blocks corresponding to said region of interest in the order they were requested (column 11, line 67, and column 12, lines 1-5).

- b. Referring to Claim 2, Chang discloses wherein the server computer progressively transmits the region of interest to a select quality threshold (zoom factor at column 9, line 50 is the claimed "select quality threshold").
- c. Referring to Claim 3, Chang discloses wherein the server computer progressively transmits the region of interest to lossless quality (column 6, line 47).
- d. Referring to Claim 4, Chang discloses wherein the client computer reverse transforms the region of interest received from the server computer to form a lossless reproduction of the digital image (column 9, line 67).
- e. Referring to Claim 5, Chang discloses wherein client computer displays the lossless reproduction of the digital image on a web browser resident on the client computer (see figure 8B).
- f. Referring to Claim 6, Chang discloses wherein the server computer performs the pre-processing step through a lossless wavelet transformation comprising two non-identical one-dimensional transforms (column 8, lines 7-9, two different transforms for the columns and the rows. These two different transforms are one-dimensional transforms as mentioned at column 10, line 63).
- g. Referring to Claim 7, Chang discloses an image storage device for storing a digital image (an image archive 112, column 5, line 7); a client computer (client computer 150, column 5, line 17) coupled to the communication network

(network 160, column 5, line 18), wherein said client computer generates and transmits across said communication network a request list (a request of physical coefficients coordinates corresponding to pyramidal data structure, column 9, lines 52-54, is the claimed "request list") containing the coordinates of data blocks required for rendering a region of interest (the image area is the claimed "region of interest", column 9, lines 44-45) within said digital image wherein said request list is ordered in accordance with a selected progressive mode (the request list is ordered in accordance with a selected progressive mode of "pyramidal data structure", which is a coarse-to-fine structure/mode); a server computer (server 140, column 5, line 16) coupled to said communication network and said image storage device, said server computer adapted to perform the steps (a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). The following steps are performed as intended use of the server in claimed system. For the sake of brevity, the examiner provides explanation as follows) of: preprocessing said digital image through a low pass filter and a lossless wavelet transform to yield low pass scaling function data, high pass wavelet coefficient data and halfbit data (see equations at column

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9, low[j] is a low pass filter, high[j] is a high pass filter poly[j] is the halfbit data, and 64 is the scaling function data, which is scale of 6 because  $2^6 = 64$ ); receiving said request list from said client computer (the request list mentioned above, column 9, lines 58-60); and progressively transmitting to said client computer data blocks corresponding to said region of interest in the order they were requested (column 11, line 67, and column 12, lines 1-5), said subband coefficient data blocks defined by said coordinates and determined in accordance with said wavelet coefficients and said halfbit matrix (column 9, lines 52-60).

- h. With regard to Claim 8, all limitations are addressed in Claim 2.
- i. With regard to Claim 9, all limitations are addressed in Claim 3.
- j. With regard to Claim 10, all limitations are addressed in Claim 4.
- k. With regard to Claim 11, all limitations are addressed in Claim 5.
- l. With regard to Claim 12, all limitations are addressed in Claim 6.
- m. With regard to Claim 13, all limitations are addressed in Claim 1.
- n. With regard to Claim 14, all limitations are addressed in Claim 2.
- o. With regard to Claim 15, all limitations are addressed in Claim 3.
- p. With regard to Claim 16, all limitations are addressed in Claim 4.
- q. With regard to Claim 17, all limitations are addressed in Claim 5.
- r. With regard to Claim 18, all limitations are addressed in Claim 6.
- s. With regard to Claim 19, the only difference between Claim 19, and Claim 1 is Claim 19 calls for "wherein said request list is ordered in accordance with the absolute value of requested subband coefficients whereby subband coefficients with larger absolute



values are requested before subband coefficients with smaller absolute values (see explanation provided in paragraph 5 above).

- t. With regard to Claim 20, all limitations are addressed in Claim 8.
- u. With regard to Claim 21, all limitations are addressed in Claim 9.
- v. With regard to Claim 22, all limitations are addressed in Claim 10.
- w. With regard to Claim 23, all limitations are addressed in Claim 11.
- x. With regard to Claim 24, all limitations are addressed in Claim 12.
- y. With regard to Claim 25, all limitations are addressed in Claim 1.
- z. With regard to Claim 26, all limitations are addressed in Claim 2.
- aa. With regard to Claim 27, all limitations are addressed in Claim 3.
- bb. With regard to Claim 28, all limitations are addressed in Claim 4.
- cc. With regard to Claim 29, all limitations are addressed in Claim 5.
- dd. With regard to Claim 30, all limitations are addressed in Claim 6.
- ee. With regard to Claim 31, all limitations are addressed in Claims 19 and 1.
- ff. With regard to Claim 32, all limitations are addressed in Claim 8.
- gg. With regard to Claim 33, all limitations are addressed in Claim 9.
- hh. With regard to Claim 34, all limitations are addressed in Claim 10.
- ii. With regard to Claim 35, all limitations are addressed in Claim 11.
- jj. With regard to Claim 36, all limitations are addressed in Claim 12.
- kk. With regard to Claim 37, all limitations are addressed in Claim 19.
- ll. Referring to Claim 38, Chang discloses wherein in each layer of precision the order of data block requests is according to resolution whereby low resolution coefficient data blocks are requested first and highest resolution coefficient data blocks are

requested last (it is the characteristic of pyramidal data structure, transmitting data from coarse to fine).

mm. With regard to Claim 39, all limitations are addressed in Claim 38.

nn. With regard to Claim 41, all limitations are addressed in Claim 31.

oo. With regard to Claim 42, all limitations are addressed in Claim 38.

pp. With regard to Claim 43, all limitations are addressed in Claim 39.

qq. With regard to Claim 45, all limitations are addressed in Claim 38.

rr. With regard to Claim 46, all limitations are addressed in Claim 39.

ss. With regard to Claim 48, all limitations are addressed in Claim 38.

tt. With regard to Claim 49, all limitations are addressed in Claim 39.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 40, 44, 47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Kohiyama et al (U.S. Patent No. 5,666,161). The applicability with regard to Chang in paragraph 6 is incorporated herein.

a. Referring to Claim 40, Chang does not disclose the progressive mode comprises progressive by spatial order whereby data blocks are requested from top to bottom. However, Kohiyama at column 1, lines 45-60, teaches it is well known in the art that to transmit data blocks from top to bottom as shown in figure 2B.

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Kohiyama teaches such sequential transmission system is alternative to progressive transmission system (column 1, lines 45-47).

- b. With regard to Claim 44, see explanation in Claim 40.
- c. With regard to Claim 47, see explanation in Claim 40.
- d. With regard to Claim 50, see explanation in Claim 40.

8. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al.

Referring to Claim 51, the only difference between Claim 7 and Claim 51 is Claim 51 calls for additional limitation of “if a requested data block is not present in said memory cache, performing said step of preprocessing on a minimum portion of the region of interest requiring processing”, which is obvious to a person of ordinary skill in the art to modify Chang’s system to incorporate such function step since the server already has the processing capability as explained in Claim 7 above.

***Allowable Subject Matter***

9. Claims 52-62 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

- a. Independent Claim 52 defines a feature of applying a high Y-direction wavelet transform to a high portion of said temporal matrix to yield HL and HH subband coefficients including a half-bit matrix containing half-bits, each half-bit corresponding to an HH subband coefficient. This feature in combination with other features in Claim 52, which is the broadest allowable claim, is not taught or suggested by the art of record.
- b. Claims 53-62 are dependent upon Claim 52.

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10. Claims 63 and 64 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Keith et al, U.S. Patent No. 5,966,465, see columns 12-13.
- b. Mahaoney et al, U.S. Patent No. 5,999,664, see columns 32, lines 43-57.
- c. Zandi et al, U.S. Patent No. 5,867,602, see columns 9-14.
- d. JPEG2000 Image Coding System, JPEG 2000 Final Committee Draft Version 1.0, 16 March 2000, page 124-143, see Annex F.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

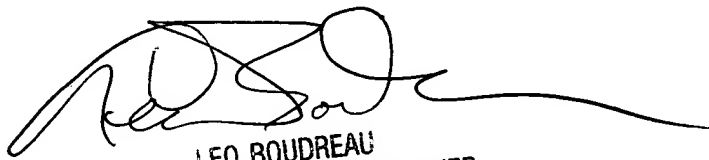
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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Y. Lu



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